

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons which follow. Claims 1, 2, and 4-10 were pending in the application. Claims 1 and 7 have been amended. No new matter has been introduced. Thus, claims 1, 2, and 4-10 are submitted for reconsideration at this time.

A one month extension of time is filed concurrently herewith.

Claim Objections

Claim 7 is objected to for reciting "signal" rather than "symbol" on lines 3-6 and 12. Applicant has amended claim 7 accordingly. Withdrawal of the objection to claim 7 is earnestly solicited.

Prior Art Rejections

Claims 1, 2, and 4-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,525,788 (Bridgelall) in view of Japanese Reference JP 3-1285 (Inagaki), U.S. Patent No. 5,436,439 (Nishimura) and U.S. Patent No. 5,308,960 (Smith). The Office Action alleges that newly cited reference Smith discloses continuously adjusting the focus of an optical symbol reading device in col. 21, line 9-col. 22, line 33. Applicants respectfully traverse the rejection for at least the following reasons.

Smith discloses a continuous focus system 500 used to continuously focus camera 50 of multiple code camera systems 10, 100 in real time (col. 21, lines 10-12). Within focusing system 500 the scanning distance between camera 50 and a surface below camera 50 is constantly measured by distance sensor system 506 (col. 21, lines 12-15). Distance sensor system 506 is preferably adapted to measure the distance from camera 50 downward to conveyor belt 20 or to the top surface of moving object 42 disposed upon conveyor belt 20 (col. 21, lines 15-19). Distance sensor system 506 of continuous focus system 500 may be an ultrasonic system or an infrared system (col. 21, lines 20-23). Smith fails to disclose or suggest, however, the distance sensor system 506 using solely light signals to measure the scanning distance.

In contrast, the present invention uses a laser beam to scan the surface of the article (page 9, lines 13-18). Applicant has amended claim 1 accordingly, to recite wherein the image data input section receives electrical signals obtained solely from light signals. As Smith fails to disclose or suggest this feature, even as combined the

cited art fails to achieve the structure and/or benefits of the claimed invention. Withdrawal of the aforementioned rejection under 35 U.S.C. §103(a) is earnestly solicited.

Claims 7-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Bridgelall as modified by Inagaki, Nishimura, and Smith, further in view of U.S. Patent No. 5,869,827 (Rando). The Office Action alleges that newly cited reference Rando discloses conveying an article including a first optical symbol on a front surface and a second optical symbol on a back surface, reading the first and second optical symbols while conveying the article in order to ensure accurate identification of the article. Applicants note, however, that Rando fails to rectify the aforementioned deficiencies in Smith.

Hence, Applicant has also amended claim 7 to recite wherein the optical symbol reader senses solely with light signals. As Rando and Smith both fail to disclose or suggest this feature, even as combined the cited art fails to achieve the structure and/or benefits of the claimed invention. Withdrawal of the aforementioned rejection under 35 U.S.C. §103(a) is earnestly solicited.

Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

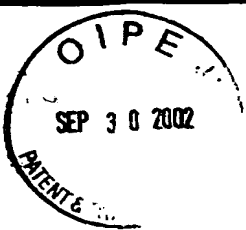
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Should additional fees be necessary in connection with the filing of this paper, or if a petition for extension of time is required for timely acceptance of same, the Commissioner is hereby authorized to charge deposit account No. 19-0741 for any such fees; and applicant hereby petitions for any needed extension of time.



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

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TECHNOLOGY CENTER 2800

1. (Four Times Amended) An optical symbol reading device comprising:
an image data input section including a front surface symbol reading device and back surface symbol reading device, an image data input unit for receiving a bar code label, characters, symbols, or image data on an article that is moved by a conveyor, and an image data input focus point modifier;
an article detector for detecting that said article has entered a read zone;
an interpreter for converting electric signals from said image data input section to numbers or characters; an interpretation result output section for outputting the interpretation results of said interpreter to an external device;
a front surface/back surface position detector for continuously detecting a position on said conveyor of both a front surface and a back surface of an article that is moved by said conveyor; and
an image data input focus point control section for outputting data from said front surface/back surface position detector to said image data input focus point modifier, said image data input focus point modifier continuously adjusting the focus point based on said data from said front surface/back surface position detector,
wherein said image data input section receives electrical signals obtained solely from light signals.

7. (Amended) A method of reading an optical symbol, comprising the steps of:
conveying an article including a first optical symbol on a front surface and a second optical [signal] symbol on a back surface;
reading said first optical [signal] symbol while conveying said article; and
reading said second optical [signal] symbol while conveying said article,
wherein the step of reading said first optical [signal] symbol comprises the steps of:
detecting said front surface of said article;
calculating a distance from an optical symbol reader to said front surface;
continuously adjusting the focus of said optical symbol reader based on said calculated distance to said front surface; and

sensing said first optical symbol with said optical symbol reader, and
wherein the step of reading said second optical [signal] symbol comprises the
steps of:

detecting said back surface of said article;

calculating a distance from said optical symbol reader to said back
surface;

continuously adjusting the focus of said optical symbol reader based on
said calculated distance to said back surface; and

sensing said second optical symbol with said optical symbol reader,
wherein said optical symbol reader senses solely with light signals.